FIGURE 1/3

A.

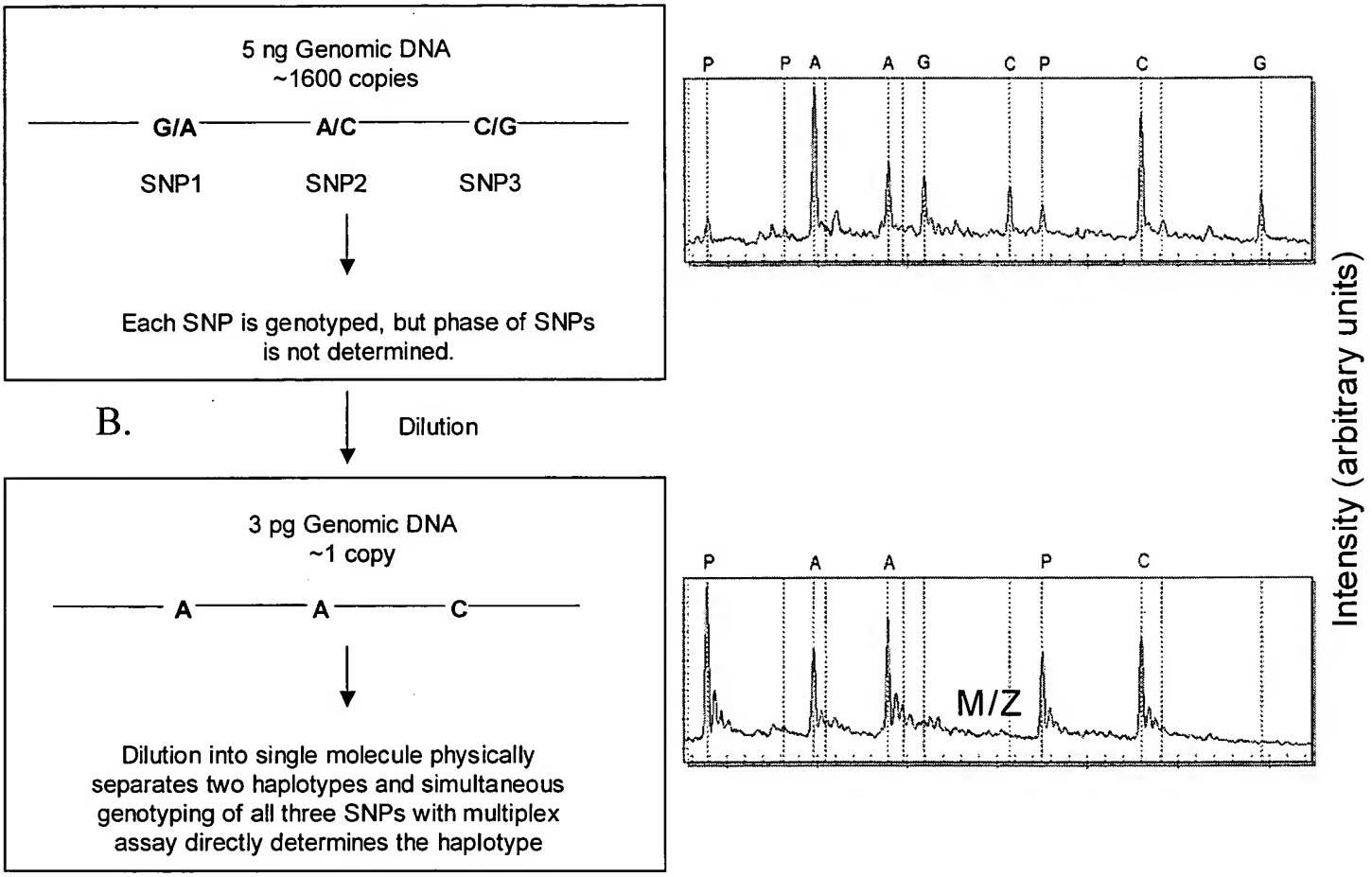

5 ng Genomic DNA
~1600 copies
G/A
A/C
C/G
SNP1
SNP2
SNP3
Each SNP is genotyped, but phase of SNPs is not determined.
B.
Dilution
3 pg Genomic DNA
~1 copy
A
A
C
Dilution into single molecule physically separates two haplotypes and simultaneous genotyping of all three SNPs with multiplex assay directly determines the haplotype
P P A A G C P C G
P A A P C
M/Z
Intensity (arbitrary units)

FIGURE 2/3

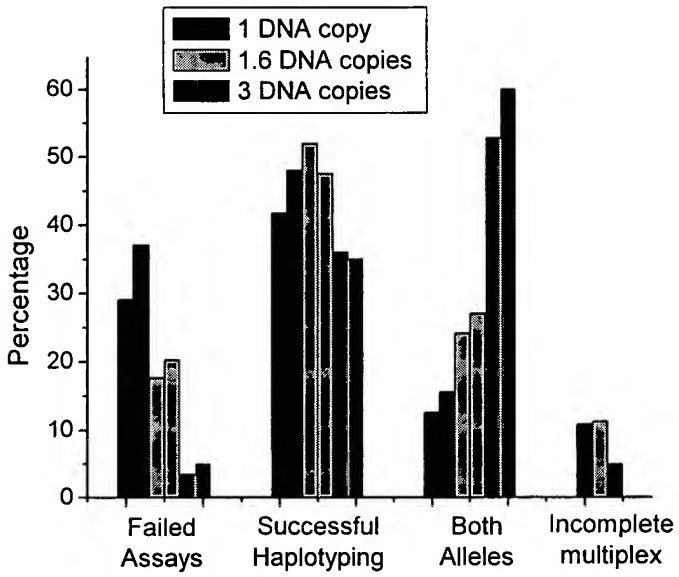
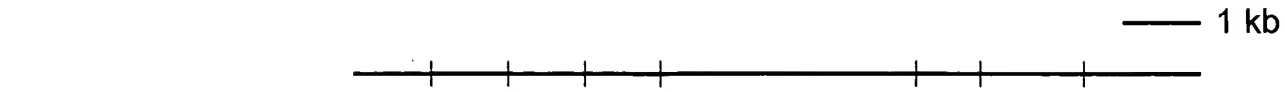

1 DNA copy
1.6 DNA copies
3 DNA copies
Percentage
0
10
20
30
40
50
60
Failed Assays
Successful Haplotyping
Both Alleles
Incomplete multiplex

FIGURE 3/3



SNP	A	B	C	D	E	F	G
Multiplex Assay 1	+	+	+		+	+	
Multiplex Assay 2			+	+	+	+	+
Individual 6, Assay 1	A	G	A		G	T	
	C	G	G		G	C	
Individual 6, Assay 2			G	G	G	C	T
			A	G	G	T	T
Individual 6, Haplotypes	A	G	A	G	G	T	T
	C	G	G	G	G	C	T